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(54) Title: A METHOD FOR MANUFACTURING A DIAMOND COMPOSITE

(57) Abstract: The present invention relates to a method for manufacturing a diamond composite, comprising the steps of: a) mixing diamonds with additives, the mixture comprising at least 50 wt% and less than 95 wt% of diamonds and more than 5 wt% additives; b) forming a work piece from the mixture using a pressure of at least 100 Mpa; c) heating the formed work piece to at least 300°C for removing possible water and wholly or partially removing additives; d) heating the work piece and controlling the heating temperature and heatin time so that a certain desired amount of graphite is created by graphitization of diamonds, wherein the amount of graphite created by graphitization is 3-50 wt% of the amount of diamond; e) infiltrating silicon or silicon alloy into the work piece, the infiltration of silicon or silicon alloy being performed at a temperature below 1900°C and a pressure less than 50 bars; and f) heating the infiltrated work piece to form silicon carbide, or other carbides, (and silicides), thereby creating a final diamond composite.

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